PINAL AIRPARK MASTER PLAN

Prepared for the
County of Pinal

CHAPTER 5
FACILITY REQUIREMENTS

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To properly plan for the future of Pinal Airpark, it is necessary to translate forecast aviation demand into specified types and quantities of facilities that can adequately serve this identified demand. This chapter uses the results of the forecast analyses conducted in Chapter Four as well as established planning criteria to determine the airside (i.e., runways, taxiways, navigational aids, marking, and lighting) and landside (i.e., hangars, terminal building, aircraft parking apron, fueling, automobile parking, and access) facility requirements.

The objective of this effort is to identify in general terms the adequacy or inadequacy of the existing airport facilities and outline what new facilities may be needed to accommodate forecast demands. Having established these facility requirements, alternatives for providing these facilities will be evaluated in Chapter Six to determine the most cost-effective and efficient means for implementation. FAA **Advisory Circular (AC) 150/5300-13, Airport Design**, serves as the primary reference in planning airfield facilities. The facilities required for a specific airport are also dependent upon the type and volume of aviation activity expected at the airport.

AIRSIDE REQUIREMENTS

Airside facilities are those directly related to the arrival and departure of aircraft:

- Runways
- Taxiways
- Airfield Marking and Lighting
- Navigational Aids

The selection of the appropriate design standards for the development of the airfield facilities is based primarily upon the characteristics of the aircraft which are expected to use the airport. The most critical characteristics are the approach speed and size of the critical design aircraft anticipated to the serve the airport. Planning for future aircraft use is particularly important because design standards are used to plan separation distances between facilities that could be very costly to relocate at a later date.

FAA **AC 150/5300-13** groups aircraft into five categories based upon their approach speed. Approach Categories A and B include small propeller aircraft and certain smaller business aircraft which have approach speeds of less than 121 knots. Categories C, D, and E consist of the remaining business jets as well as larger jet and propeller aircraft generally associated with commercial and military use; these aircraft have approach speeds of 121 knots or more. Most fixed-wing aircraft utilizing Pinal Airpark fall into Approach Categories C and D. The advisory circular also established six aircraft design groups, based on the physical

size (wingspan) of the aircraft. Airplane Design Groups range from Group I, for aircraft with wingspans of less than 49 feet, to Group VI, for the largest transport and military aircraft. The majority of fixed-wing aircraft operating at Pinal Airpark are included in Airplane Design Groups IV and V (wingspans less than 214 feet).

A variety of fixed-wing aircraft use Pinal Airpark on a regular basis, including Evergreen International's large fleet of commercial aircraft, including Boeing 747s and 727s, and McDonnell-Douglas DC-9 and DC-8 aircraft. The fixed-wing aircraft that use the Airpark are normally there because of the Evergreen Air Center or for use by one of the existing tenants such as Sierra Pacific Airlines, the Department of Defense (DOD), or the Army National Guard.

RUNWAYS

The existing Runway 12-30 was constructed by the military in 1942. The runway is 6,850 feet long and 150 feet wide. The runway was overlaid in 1988 and is in good condition. There are no obstructions in the approaches to the runway, although an access road located at the South end of the Airpark, crosses the Runway 30 Protection Zone (RPZ). The RPZ's are relatively free of development, although they are not contained entirely within Airpark property. The runway has centerline-to-centerline separation from the parallel taxilane/taxiway of 490 feet. The original airport facility was constructed with three sets of parallel runways—two runways were approximately 6,400 feet; a third was 5,000 feet long; and the remaining three were constructed within the main runways and ranged from approximately 3,200 to 4,500 feet long. All original runway surfaces, with the exception of the active Runway 12-30, have been closed or abandoned and are now used to store aircraft. Most of the older and unused runway facilities are in a state of disrepair and unusable for any other purpose than long-term aircraft storage.

The active runway and taxiway facilities at Pinal Airpark were developed many years ago under previous airport design criteria. Current airport design standards are considerably different from those used to develop many of the primary facilities at the Airpark. Future facilities should be developed in accordance with current design standards to the greatest extent possible. A summary of current Federal Aviation Administration (FAA) airport design standards is listed in **Table 5-1.**

The adequacy of the existing runway system at Pinal Airpark was analyzed from a number of perspectives including runway orientation, airfield capacity, runway length, and pavement strength. From this information, runway requirements for the airport were determined.

Table 5-1
FAA RUNWAY DIMENSIONAL STANDARDS
Airplane Design Group V

Runway Length	10,000 feet[a]
Runway Width	150 feet
Runway Shoulder Width	35 feet
Runway Safety Area Width	500 feet
Runway Safety Area Length (Beyond Runway End)	1,000 feet
Obstacle-Free Zone	415 feet
Primary Surface Width	500 feet
Primary Surface Length (Beyond Runway End)	200 feet
Runway Centerline to:	
Parallel Taxiway Centerline	450 feet
Aircraft Parking Area	500 feet
Building Restriction Line	750 feet*
Taxiway Width	75 feet
Taxiway Shoulder Width	35 feet
Taxiway Safety Area Width	214 feet
Taxiway Centerline to Fixed/Movable Object	160 feet
Taxilane Centerline to Fixed/Movable Object	138 feet

[a] Length required to accommodate Boeing 747 and other large transport fleet with typical commercial operational range/payload configurations.

* 750-foot Building Restriction Line is based on FAA design standards contained in Advisory Circular (AC) 150/5300-13.

Runway Orientation

The orientation of runways for takeoff and landing operations is primarily a function of wind velocity and direction, combined with the ability of aircraft to operate under adverse wind conditions. Pinal Airpark's primary runway, identified as 12-30, oriented in a northwest-southeast alignment. As a general rule, the primary runway at an airport is oriented as closely as practical in the direction of prevailing winds. When landing and taking off, aircraft are able to maneuver on a runway as long as the wind component perpendicular to the aircraft's direction of travel (defined as crosswind) is not excessive.

The maximum allowable crosswind depends not only on the size of aircraft, but also on the wing configuration and the condition of the runway surface. For runway planning and design, a crosswind component is considered excessive at 15-miles per hour for aircraft over 12,500 pounds gross takeoff weight, and 12-miles per hour for smaller aircraft. FAA planning standards indicate that an airport should be planned with the capability to operate under allowable wind conditions at least 95 percent of the time.

A wind rose analysis is utilized to determine airport wind coverage. Wind data for Pinal Airpark is not currently available. As previously stated in Chapter Four of this report, the wind data for Tucson International approximates the wind coverage at Pinal Airpark. Based on the Runway 12-30 alignment over the Tucson International Airport wind rose, coverage was estimated at 96.6 percent at 15-miles per hour. Coverage at 12-miles per hour is estimated at roughly 94 percent. Generally, wind coverage for the runway is considered to be adequate according to Airpark users and tenants.

Airfield Capacity

Aircraft types, as listed in **Table 5-2**, Aircraft Classification, are categorized into four classifications, depending on the maximum gross weight and type of propulsion. Based on the listed categories and classifications, the based aircraft mix at Pinal Airpark for 1990 consisted of 33 percent Class A and B aircraft; 2 percent Class C; 2 percent Class D; and 63 percent helicopter activity.

An evaluation of airfield capacity shows that the airport's annual service volume (ASV) is currently estimated at 153,900 operations. Current hourly capacity for Runway 12-30 is estimated at 73 operations per hour. Over the course of the planning period, the ASV for Pinal Airpark is anticipated to remain relatively stable, although declining slightly as the percentage of large aircraft operations increases. The projected ASV for the year 2010 is 123,800 operations (62 operations per hour). Airpark operations for 1990 were estimated at 174,500; however, approximately 99,000 helicopter operations occurred on the ANG Helipads located east of the runway. As a result, 75,500 operations (43 percent of Airpark operations) occurred on Runway 12-30, accounting for roughly 49 percent of its ASV.

Table 5-2
AIRCRAFT CLASSIFICATION

Class	Description	Examples
A	Small single-engine aircraft with a gross weight of 12,500 pounds or less	Cessna 172/182; Beech Bonanza; Mooney 201; Piper Cherokee/ Warrior
B	Small twin-engine aircraft with a gross weight of 12,500 pounds or less	Beech Baron; Cessna 402; Piper Navajo; Mitsubishi MU-2; Cessna Citation I; Lear 24
C	Large aircraft with a gross weight of over 12,500 pounds up to 300,000 pounds	Beech King Air 200; Swearingen Metro; Lear 35/55; Falcon 50; McDonnell-Douglas DC-9/MD-80; Boeing 727
D	Large aircraft with a gross weight of 300,000 pounds or more	Lockheed L-1011; Boeing 747; Air Bus A-300/A310; McDonnell-Douglas DC-10/MD-100

Source: FAA Advisory Circular 150/5060-5, "Airport Capacity and Delay," dated 9-23-83, as revised by Change 1 dated 5-16-84.

As noted in the Forecast Chapter, Airpark operations declined between 1990 and 1991, due primarily to the relocation of operations by B&F Aviation to Avra Valley Airport. It is also noted that the majority of Army National Guard helicopter training (practice takeoff and landings) will be relocated to a new facility at Picacho Peak by 1993 or 1994, although the aircraft will continue to be based at Pinal Airpark. As a result of these operational changes, the forecasts of aviation activity reflect significantly lower operations in 1995, followed by gradual growth through the remainder of the twenty-year planning period.

FAA **Order 5090.3B, Field Formulation of the National Airport Systems**, indicates that improvements should be considered when operations reach 60 percent of annual capacity. Based on forecast operations and airfield capacity, the runway will be operating at approximately 31 percent of capacity by the end of the planning period. Therefore, it is apparent that the existing runway/taxiway system will offer adequate capacity to accommodate forecast demand through the twenty-year planning period.

Runway Length

Runway 12-30 currently has a length of 6,840 feet. This length is considered adequate to accommodate the majority of the larger multi-engine and jet aircraft currently operating at the Airpark. As noted earlier, the majority of operations by the most demanding transport category aircraft are currently related to maintenance, training, or aircraft storage facilities at the Airpark. As a result, these aircraft operate at weights considerably lower than would be expected for typical commercial or military aviation requirements. It has been noted that a longer runway would be required to accommodate these aircraft at higher operating weights. In the event that large aircraft activity at Pinal expands to include a broader mix of military, cargo, or other similar operations where heavier operating weights were required, Runway 12-30 would require lengthening. The current general aviation fixed-wing aircraft and military activity generally have adequate runway length to accommodate their requirements.

Discussions have been held with Evergreen Air Center regarding their future operations and potential requirements for additional runway length. The continued expansion of their operations is greatly dependent on the expansion and improvement of Airpark facilities. Evergreen did initially express a general interest in a proposed runway extension of 1,550 feet, which would extend Runway 12-30 to 8,400 feet. However, Evergreen has subsequently indicated that while a 1,550-foot extension of Runway 12-30 would provide a marginal operational benefit, it would not significantly expand their capabilities beyond their current operations. Evergreen indicated that a runway length of 10,000 feet would be needed to accommodate the Boeing 747 and other larger transport aircraft with larger loads. However, Evergreen was clear in stating that their long-range development plans cannot be fully determined until current Airpark lease renegotiations with Pinal County are completed. Evergreen indicated that based on their current operations, the highest priorities should be related to rehabilitating existing pavement (taxiway, apron, and runway); longer term plans could include runway extensions, but that is not currently a high priority within their organization.

Based on local conditions and the methodology outlined in **AC 150/5325-4A, Runway Length Requirements for Airport Design**, a runway length of 10,000 feet would be required to accommodate the critical aircraft (Boeing 747) with a typical mid-to-upper level commercial payload/range configuration. The calculation of the recommended runway length is based primarily upon airport elevation (1,891 feet mean sea level), mean maximum daily temperature of the hottest month (102.8°F.), runway gradient (0.248 percent), and the critical aircraft type. Additional discussions with Boeing Commercial Aircraft Company staff indicated that based on the conditions specified at Pinal Airpark, a runway length of 10,000 feet would be required to accommodate a typically-equipped B747-200 with a gross takeoff weight of approximately 700,000 pounds; at 775,000 pounds gross takeoff weight, a runway length of approximately 11,500 feet would be required under the same conditions. The 10,000-foot length represents a runway capable of accommodating the critical aircraft under a wide variety of commercially oriented operational conditions.

An analysis of aircraft fleet mix and projected activity indicates that the existing runway length is not able to accommodate all of the aircraft during the full year. Some aircraft are required to reduce their fuel loads during the summer months. During the hottest conditions, many of the larger transport aircraft are not able to operate on the existing runway. **Table 5-3** presents the typical runway length requirements for a variety of commercial jet aircraft for operating conditions which are common at Pinal Airpark.

Table 5-3
AIRCRAFT RUNWAY LENGTH REQUIREMENTS

Aircraft	RUNWAY LENGTH	
	Landing	Takeoff
Boeing 747-200[a]	6,500	8,400
Boeing 747-200[b]	8,700	10,000
Boeing 727-200	5,700	8,500
Lockheed L1011	6,800	8,500
MDC-DC-10	7,000	8,400

Source: FAA AC 150/5325-4A, **Runway Length Requirements for Airport Design**; Aircraft Manufacturer Performance Data.

[a] Approximately 650,000 lb. takeoff weight; 530,000 lb. landing weight.
[b] Approximately 700,000 lb. takeoff weight; 630,000 lb. landing weight.

The Boeing 747-200 operates regularly at Pinal Airpark, primarily by Evergreen, which currently has 22 747 aircraft in their fleet. Most of these 747s are flown to the Air Center for scheduled maintenance. The existing runway provides adequate distance for aircraft landing and takeoff requirements when operated with limited payload or fuel or under most temperatures. The added runway length would provide an additional margin of safety as well as allowing the County and existing Airpark users to expand the operating capability of the facility. The Airpark's ability to attract and accommodate a variety of other business activities which utilize large transport category aircraft would also be improved. It appears that the demand for a runway extension would develop well into the twenty-year planning period. The existing runway length will be capable of accommodating current aircraft operational requirements under all but the most extreme conditions.

Runway Pavement Strength

Runway 12-30 is currently strength-rated at 30,000 pounds for aircraft equipped with single-wheel (SW) landing gear, 100,000 pounds for aircraft having dual-wheel (DW) landing gear, and 150,000 pounds for aircraft having dual-tandem-wheel (DTW) landing gear. The pavement strength is adequate for all aircraft operating at Pinal Airpark on a regular basis under current typical conditions (minimum payloads and limited fuel). If the Airpark operations included increased use by heavier aircraft, a comprehensive pavement testing program should be conducted. Depending on the frequency of operations, an increase in pavement strength may be required to accommodate the most demanding aircraft using the runway on a regular basis. Large air carrier airport runways with regular heavy transport aircraft traffic are often rated to 350,000 pounds dual tandem wheel (DTW) and 800,000 pounds double dual tandem (DDT) landing gear configurations. The long-term plans of Evergreen Air Center have not been determined at this time, however, preliminary interests include the development of another major hangar complex that would handle two additional Boeing 747 aircraft. The increased activity associated with this type development would warrant a pavement testing and evaluation program.

The most recent airport pavement evaluation was conducted by the Air Force Engineering and Services Center at Tyndall Air Force Base, Florida, in November 1980. The testing indicated that Runway 12-30 was in poor condition, with major reconstruction required. The existing runway surface was overlaid with asphalt in 1988, although other sections of pavement have become unusable and closed. During the initial Master Plan data collection process, an on-site inspection of all airfield pavement was conducted. The following is a summary of the text from that evaluation:

> The Runway 12-30 surface is in good condition, except for long cracks on the construction joints. These cracks should be sealed to prevent continued erosion of the base materials. For the most part, all access taxiways leading from the runway to the apron are in poor condition. The center access taxiway has been closed due to its complete failure. This taxiway will have to be completely reconstructed before it can be available for aircraft use. All other access taxiways are in fair-to-good condition and will only require an overlay in the near future.

TAXIWAYS

Taxiways are constructed primarily to facilitate aircraft movements to and from the runway system. Some taxiways are necessary simply to provide access between apron and runways, while other taxiways become necessary to maintain operational safety and efficiency. Runway 12-30 is served by a parallel taxilane/taxiway system with five exit taxiways. Based on the airfield capacity analysis, the number and location of exit taxiways provides for the efficient movement of aircraft through the runway-taxiway system. The separation between the runway and parallel taxiway is approximately 490 feet and exceeds Airplane Design Group V standards. As indicated earlier, the current FAA design standard for runway/taxiway separation is 450 feet. This separation may become a factor in the evaluation of alternatives in the following chapter. A summary of the SFC Engineering recent on-site inspection of taxiway pavement is presented below:

> The parallel taxiway leading from the aircraft parking apron to the approach end of Runway 12 is in extremely poor condition and needs immediate attention. The concrete pavement area closest to the apron is in bad condition and should be repaired as soon as possible before it becomes unusable. The most economical method for accomplishing this would be to seal the cracks and overlay the existing surface with asphalt. The asphalt section of this taxiway shows signs of subgrade failure, resulting in problems with the asphalt surface. The recommended repair to this section of pavement would be the removal of the surface course and subgrade materials with the reconstruction of the entire pavement area. The access taxiway at the Runway 12 end is also in need of repair. Low spots in the pavement allow ponding, which over time will destroy the asphalt surface. A slurry seal process will preserve the pavement surface and prevent further erosion of the subgrade.

Airpark users indicate a need to widen the end and center access taxiways. At the present time, the taxiways do not meet FAA design standards for Airplane Design Group V aircraft. The access taxiways are presently 50 feet wide with less than standard radii at pavement intersections. All taxiways serving the critical aircraft are required to be 75 feet in width. The approved radius for Airplane Design Group V aircraft would be 150 feet, a considerably greater length than presently exists.

AIRFIELD INSTRUMENTATION AND LIGHTING

There are no existing electronic navigational aids at Pinal Airpark. No approach landing aids are located on the runway to provide visual-descent guidance to pilots during landing. A Visual Approach Slope Indicator (VASI) system has been acquired by the Department of Defense (DOD) and will soon be installed on Runway 12. New visual approach type equipment have been developed to replace the VASI systems. The pulse light approach

slope indicator system (PLASI) and precision approach path indicator (PAPI) each provide visual approach guidance. It would be expected that, if a visual approach system were to be installed on Runway 30, it would consist of one of the newer PAPI lighting systems.

Runway end identifier lights (REILs) provide rapid and positive identification of the approach end of the runway. A REIL system has also recently been acquired by DOD and will be installed at both ends of the runway with the runway lights and VASI.

Runway lighting on Runway 12-30 is low-intensity edge lighting (LIRL). The LIRL system is not adequate to serve existing activity, particularly transport category aircraft. In addition, the runway lighting system is in extremely poor condition and is becoming increasingly unreliable. The DOD, in support of their operation at Pinal Airpark, has purchased new High-Intensity Runway Lights (HIRL), to be installed by Evergreen Air Center. The total DOD lighting package includes the runway and taxiway lights as well as the previously mentioned VASI and REILs systems. Once these are installed, the Airpark will not require a new lighting system throughout the twenty-year planning period.

Pinal Airpark is a potential site for installation of a nonprecision instrument approach and terminal weather reporting facilities because of the type and mix of aircraft that use the facility. The potential nonprecision instrument approaches may include a nondirectional beacon (NDB)—possibly combined with distance measuring equipment (NDB/DME), Loran C, or a very-high frequency omni-directional range with distance measuring equipment (VOR/DME).

LANDSIDE FACILITIES

The purpose of this section is to determine the space requirements during the planning period for the following types of facilities normally associated with aviation landside areas:

- **Hangars**
- **Local and Itinerant Apron**
- **General Aviation Terminal/Services**

HANGARS

Currently, the hangars located on Pinal Airpark are large conventional hangars that are all owned or controlled by Evergreen Air Center. The largest hangar was constructed by Evergreen Air Center to accommodate one 747, and is used for aircraft maintenance. One of the smaller hangars houses the company's collection of historic aircraft, and the other is used for the refurbishment of vintage aircraft and avionics, and for instrument repair and installation. There are no general aviation type storage hangars on the airport. As discussed in the previous chapter, storage hangars for general aviation aircraft are not required, because there is no projected demand by this type of user at the Airpark.

At the present time, only the collection of vintage aircraft is permanently stored in enclosed facilities. All aircraft that are stored in the airfield area or on the paved aircraft apron are the larger commercial type aircraft, and they do not require enclosed storage facilities. According to Evergreen Air Center personnel, the airfield (outside) stored aircraft do not generate adequate revenues to even consider the development of new paved storage areas.

The long-term plans for Evergreen Air Center are presently being determined. However, construction of one large conventional hangar capable of housing two Boeing 747 aircraft simultaneously, is being considered. As noted earlier, Evergreen is currently renegotiating its lease with Pinal County. Evergreen indicates that all decisions regarding future company development needs will be deferred until their agreement with the County is finalized. No development plans have been presented to the study team that considers additional facilities beyond that discussed above. Evergreen has indicated that construction of the 747 hangar will require an extension of their lease.

There is also the possibility that during the planning period another aircraft maintenance or refurbishment company would choose to locate at Pinal Airpark. Adequate land area is available for a sizable expansion of hangar and storage facilities. The final Airport Layout Plan (ALP) will locate additional large maintenance hangar facilities beyond that projected and controlled by Evergreen Air Center for the planning period.

LOCAL AND ITINERANT APRON

The existing aircraft apron is 535 by 4,350 feet and accommodates all non-military activity at the Airpark. Aircraft parking apron should be provided for locally based aircraft which are not stored in hangars and for transient aircraft visiting the airport. Currently there are no locally based general aviation aircraft stored in hangars at the airport.

The apron is adequate to accommodate projected demand well into the twenty-year planning period. Additional apron expansion will be based on demands of individual users. Adequate area is currently available to extend the apron toward the end of Runway 12. The condition of existing apron surfaces is presented below:

> The concrete aircraft parking apron is showing signs of age with joint spalling and signs of pavement fatigue. The thorough inspection of the entire apron did not bring to light any signs of serious distress. It is recommended that the all the joints in the apron be sealed as soon as possible. Due to the size and weight of the aircraft that are parked on the apron, the Consultant recommends that resurfacing the concrete apron area be delayed until there is no other alternative. The majority of the airfield's old surface areas are no longer salvageable, but continued use as storage for older and lighter aircraft is highly desirable. To prevent continued deterioration of these old runway surfaces, a continued weed control program is needed.

FAA **Advisory Circular 150/5300-13** suggests a methodology by which general aviation itinerant aircraft parking requirements can be determined from knowledge of busy-day operations. At Pinal Airpark there are 30 itinerant aircraft parking spaces. Airpark management states that the parking apron is never full, with typically one or two aircraft on the apron at any one time. Based upon the limited projection for based and itinerant aircraft usage at Pinal Airpark, no additional transient or based aircraft tie-down parking positions will be required during the current planning period.

GENERAL AVIATION TERMINAL FACILITIES

General aviation terminal facilities serve several functions. Space for pilot services, restrooms, food service, and flight planning areas are typically required. In the case of Pinal Airpark, the space is provided by Evergreen Air Center, which is considered to be the fixed base operator (FBO) serving all transient general aviation. The configuration and amount of space allocated for general aviation terminal facilities are generally determined by individual general aviation service companies. These decisions are generally based on the local market conditions. With the limited general aviation activity, this specific market does not justify additional services beyond fuel, restrooms, vending machines and a covered passenger waiting area. There is a public restaurant on the airport which attracts transient pilots and passengers. With the limited activity projected for the planning period only minor refinements of existing facilities will be required during the current planning period.

SURFACE ACCESS REQUIREMENTS

Surface access system facility requirements, based upon future Airpark development options and existing roadway capacity and coverage, were developed for the Airpark. The specific requirements of each component are described in the following sections.

Airport Access Roadways

The capacity of the primary airport access roadways appears to be adequate for the planning period. The future development of the vacant property in the terminal/office area will require considerable improvements to the roadway system. The anticipated expansion of the hangar areas north of the existing development would also require improvements to Evergreen Way. Pinal Airpark Road, from the I-10 Expressway, has the capacity to serve the Airpark, but its condition is deteriorating rapidly and is in need of immediate improvement. The Airpark entrance road is in excellent condition from the current visitors' gate to the hangar area and to other Airpark facilities located in the terminal area. Del Smith Boulevard is parallel to the main apron area and extends north to Army National Guard Base. Improved circulation roadways will be required through the Airpark as increased development occurs. Many of the existing roadways are either dirt or extremely poor condition asphalt pavement. Proposed development alternatives will evaluate the existing roadway system and recommend new alignments (if necessary) and improvements required.

Vehicle Parking Requirements

The requirement for public vehicle parking is very limited and determined as a function of the specific business activity and an overall level of utilization in the area. The number of parking positions and size of the parking areas are at the present time adequate for the level of activity. Each new or existing facility will be required to have adequate space for the projected number of employees and visitors. A standard planning area of 350 square feet per parking position is assumed (includes circulation area). At Pinal Airpark, the majority of automobile parking is located in the hangar areas along the flight line. It is estimated that parking for roughly 200 vehicles is available for employees of the Evergreen large-hangar/office complex. The same facility also has a public parking area which includes spaces for 30 vehicles. This parking area services the Evergreen office and hangar complex as well as aviation-related visitors. A limited amount of additional parking should be planned for transient aircraft parking areas. The Airpark restaurant and motel facility also has a separate parking area. Although portions of this parking area are unpaved, there is adequate parking area available. The Federal Law Enforcement Training Center (FLETC) and other agency training facilities have adequate automobile parking to meet their current needs. Expansion or addition of new facilities associated with current activities may require specific improvements to the parking areas.

SUPPORT FACILITIES

AVIATION FUEL STORAGE

Fuel storage at Pinal Airpark is operated by the Evergreen Air Center. The fuel storage facility on the airport consists of seven above-ground tanks, located south of the main apron. Fuel storage requirements vary based on individual supplies and distributor policies. The capacity of the existing system is 150,000 gallons of Jet A, 30,000 gallons of 100-octane aviation gasoline (AVGAS), and 30,000 gallons of automobile fuel. The current fuel storage capacity adequately serves current and projected demands, therefore, no new fuel storage facilities are planned during the study period.

AIRPORT UTILITIES

The existing airport utilities appear to have adequate capacity to accommodate aviation-related expansion. The development of new areas on the airport will require extensions of existing lines, or new lines.

SECURITY

Although the airport has limited fencing around the runway and apron areas, it is inadequate to effectively control human and animal access to the active airfield areas. Airport security fencing should be installed to protect all active airport facilities, including runways, taxiways, and aircraft tie-down and apron areas. Standard 6-foot chain link fencing

is recommended, with gates provided to control entry into aircraft operations areas. The Airpark has a high level of security to insure the safety and security of all Airpark facilities and stored aircraft. A high level of security is required based on the value of stored aircraft and a variety of specialized tenants. All visitors to the Airpark stop at the guard gate on the entrance road. Screening is conducted at that location and directions given to the visitor. The tenants and other Airpark users appear to enjoy and desire the continuation of this high level of security. However, the relocation of the security gate to the current developed area adjacent to the main apron may be an option for consolidating security at the Airpark. Security measures would be directed at protecting specific facilities, the active airfield areas, and stored aircraft. Some specialized security may also be required for certain FLETC-related operational areas.

SUMMARY

A number of facility requirements for Pinal Airpark have been identified for the current twenty-year planning period. Some facilities will be capable of accommodating forecast demands through the planning period with only minor improvements; other facilities will require expansion or significant upgrading during the planning period.

The primary facility requirements are focused on improving the existing runway, taxiway, and apron facilities. The condition of the pavement on these facilities range from good to very poor (unusable). Long-term runway improvements may include a 3,150-foot extension to Runway 12 to 10,000 feet. A number of lighting and visual navigational aids are planned for Runway 12-30 through an agreement with the Department of Defense (DOD). DOD has also indicated a need to develop an east-west taxiway from the end of Runway 30 to their facilities. The need to provide blast protection for the ANG helipads and adjacent to the fuel storage area has also been identified. The development of maintenance-related run-up areas for large transport-type aircraft on the west side of Runway 12-30 has also been identified as a measure to minimize the effects of jet blast on areas of the Airpark. Additional improvement of the airport roadway system will be required as both aviation and non-aviation development areas expand on the airport.

A number of new or reconfigured facilities will need to be planned to meet a variety of demands. The next step in the master planning process is to analyze alternatives that can accommodate these requirements. The next chapter will provide this analysis and recommend specific development alternatives for which are capable of accommodating projected demands through the twenty-year planning period and beyond.